



Department of Energy

Fermi Site Office
Post Office Box 2000
Batavia, Illinois 60510

SEP 18 2009

Dr. Bruce Chrisman
Chief Operating Officer
Fermilab
P.O. Box 500
Batavia, IL 60510

Dear Dr. Chrisman:

SUBJECT: EMERGENCY OPERATIONS EMERGENCY MANAGEMENT SYSTEM (EMS)
PERFORMANCE INDICATOR PROGRAM IMPLEMENTATION

- References:
1. Memorandum, J. Krol to distribution, dated August 27, 2009, Subject: Same As Above, enclosed
 2. DOE O 151.1C, Comprehensive Emergency Management, dated November 2, 2005

The attached memorandum from the Department of Energy (DOE) National Nuclear Security Administration (NNSA) establishes eight specific performance indicators for implementation of emergency management programs at the DOE sites. All of the DOE Programs, including the Office of Science, have concurred with this memorandum.

Please ensure that the data required for the attached performance indicators, is collected and reported in the Fiscal Year 2010 Fermilab Emergency Readiness Assurance Plan, which is due to our office by September 20, 2010. This attachment and associated information has already been provided informally to the Laboratory.

If you have any questions, please contact Berline Short of my staff at extension 4197.

Sincerely,

A handwritten signature in cursive script, reading "Joanna M. Livengood".

Dr. Joanna M. Livengood
Site Manager

Enclosure:
As Stated

cc: P. Oddone
Y.-K. Kim
N. Grossman



Department of Energy
National Nuclear Security Administration
Washington, DC 20585

August 27, 2009



MEMORANDUM FOR DISTRIBUTION

FROM:

JOSEPH J. KROL
ASSOCIATE ADMINISTRATOR FOR
EMERGENCY OPERATIONS

SUBJECT:

Emergency Operations Emergency Management System
(EMS) Performance Indicator Program Implementation

DOE Order 151.1C requires Department of Energy/National Nuclear Security Administration (DOE/NNSA) facilities to participate in a program of Performance Indicators (PI), including performance measures and metrics, to capture and track data related to the performance of Emergency Management System (EMS) programs in key functional areas. Implementing these PIs across the complex will provide the Office of Emergency Operations (NA-40), DOE/NNSA Program Offices a consistent view of emergency management performance across the complex. An Emergency Management Advisory Committee (EMAC) PI Working Group, consisting of members from across the DOE/NNSA community, was formed in May 2007 to develop a set of emergency management PIs covering key emergency management program activities, including planning, preparedness, readiness assurance, and response. The candidate set of PIs were approved for complex-wide use by the EMAC members in attendance at the May 2009 Emergency Management Issues Special Interest Group meeting.

Cognizant Field Element Managers, Cognizant Program Secretarial Office, NNSA and the Director of NA-40 have concurred on the use of this set of emergency management PIs. A site survey conducted in April 2009 indicated that many individual sites are currently collecting most of the data required for the EMAC PIs for use in satisfying their own PI programs or for general program administration monitoring associated with their respective emergency management program. In addition, many surveyed sites stated that integration of EMAC PIs into an existing reporting system would be feasible with minimal burden.

I request that beginning in FY 2010 (October 1, 2009 - September 30, 2010), PI data be collected and subsequently included in your 2010 Emergency Readiness Assurance Plan (ERAP) as an appendix. These results will be used to document the readiness of complex-wide EMS programs for NA-40. The results may also be used for evaluating the adequacy of current Departmental policy and guidance and for development of requested topical reports.



Attachment 1 contains the emergency management PI definitions and associated explanations to assist in collecting the requested data. Attachment 2 contains a sample ERAP addendum that would be provided to DOE/NNSA Program Secretarial Officers (PSOs) for inclusion in Cognizant Field Element (CFE) FY 2010 ERAP submissions to Headquarters. PSO specific ERAP requirements shall remain in place and the PI data requested herein should be appended to the ERAP submittal.

For NNSA sites/facilities and activities, the EMAC PIs are the same emergency management PIs proposed by the NNSA Line Oversight and Contractor Assurance System (LOCAS) performance matrix system as required by NA-1 SD 226.1. All NNSA sites/facilities and activities should continue their participation in the LOCAS matrix system and any questions should be directed to NA-43.

Finally, some PSOs currently submit PI data to Headquarters quarterly and have requested this submission frequency remain the same. To accommodate this request, the existing electronic submission system will be maintained for use until a new web-enabled replacement collection system is made available. However, the requested new PI data is still needed for these sites and should be submitted as described above.

Should you have any questions pertaining to the above, please contact Mr. Thomas Rotella, Deputy Director, Office of Emergency Management and Policy at 202-596-2394.

Attachments

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EMAC/NA-41 Performance Indicators

The following represent the initial set of eight EMAC/NA-41 Performance Indicators (PIs) grouped according to key emergency management activities, including Planning, Preparedness, Readiness Assurance, and Response.

1. Planning

- a. **Performance Indicator (PI) for Hazards Surveys (HSs):** Confirm that new HSs are being prepared prior to new facility startup, revised HSs are being prepared prior new/changed process startup in an existing facility, and existing HSs are being reviewed/revised on schedule.

- Z = Total number of HSs.
- A = Total number of overdue new or revised HSs plus existing HSs that are overdue for review /revision
- $PI = [(Z - A) / Z] \times 100\%$

EXPLANATIONS:

- **Total number of HSs (Z):** Total number of HSs at the site. The total number of *separate* HSs is a site-specific choice. This is not necessarily the same as the number of facilities, since individual facility HSs can be combined into one HS.
- **Total number of overdue new or revised HSs plus existing HSs overdue for review/revision (A).** Total number of overdue HSs ($A=a+b+c$) includes:
 - a – Number of Overdue New HSs (required prior to facility start-up)
 - b – Number of Overdue Revised HSs (required prior to new/changed process start-up in existing facility)
 - c – Number of Overdue Revised HSs (existing facilities required review/revision greater than 3 years since last)

The indicator is intended to be evaluated on an annual basis. In order to track performance progress, the indicator can be calculated quarterly using cumulative values for Z and A at the end of each quarter. If Z = 0 for the cumulative value at any quarter, then the indicator is N/A (i.e., "not applicable.")

The *exact* deadline for calling a new HS overdue will be site-specific depending on local administrative requirements and processes associated with facility start-up documentation. Site procedures may require a fixed time period before a deadline in order to accomplish administrative reviews and approvals

- b. Performance Indicator (PI) for Hazards Assessments: For *Hazardous Materials Program facilities only*, confirm that new Emergency Planning Hazards Assessment (EPHAs) are being prepared prior to new facility startup, revised EPHAs are being prepared prior to new/changed process startup in an existing facility, and existing EPHAs are being reviewed/revised on schedule.

- Z = Total number of EPHAs.
- A = Total number of overdue new or revised EPHAs plus existing EPHAs that are overdue for review /revision.
- $PI = [(Z - A) / Z] \times 100\%$

EXPLANATIONS:

- Total number of EPHAs (Z). Total number of EPHAs required for the site.
- Total number of overdue new or revised EPHAs plus existing EPHAs overdue for review/revision (A). Total number of overdue EPHAs ($A=a+b+c$) includes:
 - a – Number of Overdue New EPHAs (required prior to facility start-up)
 - b – Number of Overdue Revised EPHAs (required prior to new/changed process start-up in existing facility)
 - c – Number of Overdue Revised EPHAs (existing facilities required review/revision greater than 3 years since last)

The indicator is intended to be evaluated on an annual basis. In order to track performance progress, the indicator can be calculated quarterly using cumulative values for Z and A at the end of each quarter. If Z = 0 for the cumulative value at any quarter, then the indicator is N/A (i.e., “not applicable.”)

The *exact* deadline for calling a new EPHA overdue will be site-specific depending on local administrative requirements and processes associated with facility start-up documentation. Site procedures may require a fixed time period before a deadline in order to accomplish administrative reviews and approvals.

2. Preparedness

Performance Indicator (PI) for Staffing the Emergency Response Organization (ERO) with Qualified Personnel: Confirm that qualified personnel fill ERO positions. Although the ERO is a response program element, this aspect is programmatic since it involves the maintenance of ERO position staffing.

- Z = Total number of qualified personnel needed to satisfy ERO positions
- A = Total number of ERO positions not filled by qualified personnel
- $PI = [(Z - A)/Z] \times 100\%$

EXPLANATIONS:

- **Total number of qualified personnel needed to satisfy ERO positions (Z):** Total number of planned ERO personnel positions, including primaries and alternates, identified by site-specific plans and procedures.
- **Total number of ERO positions not filled by qualified personnel (A):** Total number of planned ERO positions not filled by qualified personnel due to a deficiency in satisfying *site-specific* qualification requirements.

The ERO includes primary personnel assigned to ERO positions defined by functions specified in the emergency plan or procedures. Each primary is backed-up by one to several levels of alternate staff, who may fill-in for unavailable personnel or provides relief for primary staff during an extended response. For example, if there are 10 primary positions that are 3 deep, then the total number of personnel, including primaries and alternates, needed to satisfy ERO positions is 30.

ERO site-specific qualification requirements will be defined by the emergency management emergency plan and training plan. The site's requirements may include: identified training courses, specified on-the-job training experiences, exercise participation, and/or periodic skill testing.

A site-specific ERO position requirement (i.e., primary or alternate) may not be met for a number of reasons, including the following:

1. No person is available who meets the pre-requisite skill requirements (e.g., Health Physicist, Industrial Hygienist) for assignment to the position. Also includes the situation where there are no people at all available for assignment to positions with no prescribed professional skill requirements.
2. An assigned person has not received initial training or is overdue for site-specific annual refresher training.
3. An assigned person is overdue for annual proficiency demonstration (e.g., participation in an exercise) in the functions of the position to which they are assigned.

The indicator is intended to be evaluated on an annual basis. In order to track performance progress, the indicator can be calculated quarterly using cumulative values for Z and A at the end of each quarter.

3. Readiness Assurance

a. **Performance Indicator (PI) for Internal Evaluations (Self-Assessments):**

Confirm that the required annual internal evaluation (i.e., contractor self-assessment) of the emergency management program is being performed on schedule.

- Z = Total number of planned internal program element evaluations
- A = Total number of overdue internal program element evaluations
- PI = $[(Z - A)/Z] \times 100\%$

EXPLANATIONS:

- **Total number of internal program element evaluations (Z):** Number of planned internal evaluations of the emergency management program elements required to be performed by the contractor during the fiscal year [as projected in the ERAP for the previous fiscal year].
- **Total number of overdue internal program element evaluations (A):** If one or more fiscal years have passed since the last internal evaluation (i.e., contractor self-assessment) of any program element, it is considered overdue. All individual evaluations must be completed within the fiscal year to accomplish the annual self-assessment.

Both program evaluations and exercise evaluations can contribute to the accomplishment of the required annual self-assessment of the emergency management program. Program evaluations can include evaluations of both *programmatic* and *response* elements, while the evaluated exercise (or drill) would assess actual performance of *response* elements. A site-level annual exercise could generally include evaluation of most program elements, while facility-level exercises would likely include a more limited selection of elements applicable to the facility ERO; facility-level exercises can include simulation of site-level ERO components.

An effective self-assessment program will generally consist of a combination of program and exercise (e.g., annual site-level and facility-level operations-based exercises) evaluations, which test selected components of each element. The annual selection of components associated with each program element will ensure that the total program element is effectively evaluated over a site-specific timeframe (e.g., 5 years).

The Order requires an annual self-assessment of the emergency management program. The standard (i.e., according to DOE O 151.1C) emergency management program consists of a minimum 15 program elements. For evaluation efficiency and effectiveness, a site may choose to divide the elements further using a number of program element self-assessments greater than 15.

The PI is intended to be evaluated on an annual basis. In order to track performance progress, the indicator can be calculated quarterly using cumulative values for Z and A at the end of each quarter.

b. **Performance Indicator (PI) for Corrective Action Implementation:** Confirm that corrective actions are being effectively implemented.

- Z = Total number of closed corrective actions reviewed by the Cognizant Field Element (CFE)
- A = Total number of closed corrective actions reviewed and found inadequate by the CFE
- $PI = [(Z - A) / Z] \times 100\%$

EXPLANATIONS:

- **Total number of closed corrective actions reviewed by the CFE (Z):** Number of corrective actions closed by the site and reviewed for effectiveness by the CFE.
- **Total number of closed corrective actions reviewed and found inadequate by the CFE (A):** Number of closed corrective actions reviewed for effectiveness by the CFE and found inadequate.

Completion of Corrective Actions (CAs) (i.e., closure) must include a verification and validation process, independent of those who performed the CA, that verifies that the corrective action has been put in place, and validates that the CA has been effective in resolving the original finding. The term "inadequate" can be interpreted as ineffective, incomplete, or unacceptable.

The indicator is intended to be evaluated on an annual basis. In order to track performance progress, the indicator can be calculated quarterly using cumulative values for Z and A at the end of each quarter. If Z = 0 for the cumulative value at any quarter, then the indicator is N/A (i.e., "not applicable.")

4. Response

a. **Performance Indicator (PI) for ERO Activations:** ERO activation is timely.

- Z = Total number of activations of the ERO for Operational Emergencies.

- A = Total number of activations of the ERO for Operational Emergencies that did not meet the time goals.
- $PI = [(Z - A)/Z] \times 100\%$

EXPLANATIONS:

Activation of the ERO can occur during an actual event or during an evaluated drill or exercise. The time goals for activation and the required assigned positions filled will be determined using site-specific criteria based on the site's implemented emergency plans/procedures (i.e., activation criteria for time and positions).

Communication tests should not be included unless the test includes a timed response by the ERO to emergency facility positions [e.g., Emergency Operations Center (EOC)]. In addition, drills or exercises that start with ERO personnel pre-positioned at emergency facilities should not be included.

The indicator is intended to be evaluated on an annual basis. In order to track performance progress, the indicator can be calculated quarterly using cumulative values for Z and A at the end of each quarter. If $Z = 0$ for the cumulative value at any quarter, then the indicator is N/A (i.e., "not applicable.")

b. Performance Indicator (PI) for Initial Response Decisions: For Operational Emergencies, confirm that initial response decisions (i.e., categorization/classification) are within the time frame required by DOE O 151.1C.

- Z = Total number of Operational Emergencies (both actual and simulated) requiring a prompt initial response decision (i.e., categorization/classification).
- A = Total number of late initial response decisions for Operational Emergencies
- $PI = [(Z - A)/Z] \times 100\%$

EXPLANATIONS:

Operational Emergencies initiating a timely initial response decision can occur during actual events or during evaluated drills and exercises. Following event recognition, the event will be categorized/classified using the applicable Emergency Action Level (EAL) or categorization criteria within the required timeframe.

The indicator is intended to be evaluated on an annual basis. In order to track performance progress, the indicator can be calculated quarterly using cumulative values for Z and A at the end of each quarter. If $Z = 0$ for the cumulative value at any quarter, then the indicator is N/A (i.e., "not applicable.")

- c. Performance Indicator (PI) for Offsite Notifications: Confirm that required notifications of Operational Emergencies to offsite authorities are prompt.
- Z = Total number of Operational Emergencies (both actual and simulated) requiring notifications to offsite authorities
 - A = Total number of late notifications of Operational Emergencies to offsite authorities
 - PI = $[(Z - A)/Z] \times 100\%$

EXPLANATIONS:

Operational Emergencies can require the initiation of timely notifications to offsite authorities during actual events or during evaluated drills and exercises. Sites should define specifically what events are to be included (e.g., only actual events and exercises). Offsite notifications are late when they are not accomplished within the time required by the Order.

The indicator is intended to be evaluated on an annual basis. In order to track performance progress, the indicator can be calculated quarterly using cumulative values for Z and A at the end of each quarter. If Z = 0 for the cumulative value at any quarter, then the indicator is N/A (i.e., "not applicable.")

Addendum to
EMERGENCY READINESS ASSURANCE PLANS – FY 2010
(Due, e.g., November 30, 2010)

EMERGENCY MANAGEMENT
PERFORMANCE INDICATOR DATA

Emergency Management Performance Indicators: Present the data necessary to evaluate the emergency management Performance Indicators (PIs) contained in the following sections representing four key emergency management activities: Planning, Preparedness, Readiness Assurance, and Response.

1. **Planning**

- a. **Performance Indicator (PI) for Hazards Surveys:** Confirm that new HSs are being prepared prior to new facility startup, revised HSs are being prepared prior to new/changed process startup in an existing facility, and existing HSs are being reviewed/revised on schedule. Provide data for evaluating this PI in Table 1a.

Table 1a – Hazards Survey Performance Indicator Data	
	FY 2010
Total Number of Required HSs at the Site (Z)	
a = Number of Overdue New HSs (required prior to facility start-up)	
b = Number of Overdue Revised HSs (required prior to new/changed process start-up in existing facility)	
c = Number of Overdue Revised HSs (existing facilities required review/revision greater than 3 years since last)	
Total Number HSs Overdue (A = a+b+c)	
Hazards Survey PI = $[(Z-A)/Z] \times 100\%$	

- b. **Performance Indicator (PI) for Hazards Assessments (HAZARDOUS MATERIALS PROGRAMS ONLY):** Confirm that new Emergency Planning Hazards Assessments (EPHAs) are being prepared prior to new facility startup, revised EPHAs are being prepared prior to new/changed process startup in an existing facility, and existing EPHAs are being reviewed/revised on schedule. Provide data for evaluating this PI in Table 1b.

Table 1b – Hazards Assessments Performance Indicator Data	
	FY 2010
Total Number of Required EPHAs at the Site (Z)	
a - Number of Overdue New EPHAs (required prior to facility start-up)	
b - Number of Overdue Revised EPHAs (required prior to new/changed process start-up in existing facility)	
c - Number of Overdue Revised EPHAs (existing facilities required review/revision greater than 3 years since last)	
Total Number EPHAs Overdue (A = a+b+c)	
Hazards Assessment PI = $[(Z-A)/Z] \times 100\%$	

2. Preparedness

Performance Indicator (PI) for Staffing the Emergency Response Organization (ERO) with Qualified Personnel: Confirm that qualified personnel fill ERO positions. Although the ERO is a response program element, this aspect is programmatic since it involves the maintenance of ERO position staffing. Provide data for evaluating this PI in Table 2.

Table 2 – Staffing of Emergency Response Organization (ERO) Positions Performance Indicator Data	
	FY 2010
Total Number of Qualified Personnel Needed for ERO Positions (Z)	
Total Number of ERO Positions Not Filled by Qualified Personnel (A)	
ERO Staffing PI = $[(Z-A)/Z] \times 100\%$	

3. Readiness Assurance

- a. Performance Indicator (PI) for Internal Evaluations (Self-Assessments): Confirm that the required annual internal evaluations (i.e., contractor self-assessment) of the emergency management program are being performed on schedule. Provide data for evaluating this PI in Table 3a.

Table 3a – Internal Evaluations (Self-Assessments) Performance Indicator Data	
	FY 2010
Total Number of Annual Program Element Self-Assessments Required for Site (Z)	
Number of Program Element Self-Assessments Overdue (A) [i.e., If one or more fiscal years have passed since the last self-assessment of any program element, it is considered overdue]	
Internal Evaluations PI = $[(Z-A)/Z] \times 100\%$	

- b. Performance Indicator (PI) for Corrective Action Implementation: Confirm that corrective actions are being effectively implemented. Provide data for evaluating this PI in Table 3b.

3b – Corrective Action Implementation Performance Indicator Data	
	FY 2010
Total Number of Closed Corrective Actions Reviewed by the CFE or Responsible DOE/NNSA Element (Z)	
Total Number of Closed Corrective Actions Reviewed by the CFE or Responsible DOE/NNSA Element and Assessed as Inadequate (A)	
Corrective Action Implementation PI = $[(Z-A)/Z] \times 100\%$	

4. Response

- a. Performance Indicator (PI) for ERO Activations: Confirm that ERO activations are timely. Provide data for evaluating this PI in Table 4a.

Activation of the ERO can occur during an actual event or during an evaluated drill or exercise. The time goals for activation and the required assigned positions filled will be determined using site-specific criteria based on the site's implemented emergency plans/procedures (i.e., activation criteria for time and positions).

Communication tests should not be included unless the test includes a timed response by the ERO to emergency facility positions [e.g., Emergency Operations Center (EOC)]. Also, drills or exercises that start with ERO personnel pre-positioned at emergency facilities should not be included.

Table 4a – Site-Level Emergency Response Organization (ERO) Activations Performance Indicator Data	
	FY 2010
Total Number of Activations of the Site-Level ERO for Actual or Simulated Operational Emergencies (Z)	
Total Number of Activations of the ERO for Actual or Simulated Operational Emergencies that Did Not Meet Site-Specific Time Goals (A)	
ERO Activations PI = $[(Z-A)/Z] \times 100\%$	

- b. Performance Indicator (PI) for Initial Response Decisions: For Operational Emergencies, confirm that initial response decisions [i.e., event categorization/ classification] are within the time frame required by DOE O 151.1C. Provide data for evaluating this PI in Table 4b.

Table 4b – Initial Response Decisions (Categorization/ Classification) Performance Indicator Data	
	FY 2010
Total Number of Initial Response Decisions Required for Actual or Simulated Operational Emergencies (Z)	
Total Number of Late (i.e., exceeds DOE O 151.1C time requirement) Initial Response Decisions for Actual or Simulated Operational Emergencies (A)	
Initial Response Decisions PI = $[(Z-A)/Z] \times 100\%$	

- c. Performance Indicator (PI) for Offsite Notifications: Confirm that required notifications of Operational Emergencies to offsite authorities are prompt. Provide data for evaluating this PI in Table 4c.

4c – Offsite Notifications Performance Indicator Data	
	FY 2010
Total Number of Required Notifications to Offsite Authorities for Actual or Simulated Operational Emergencies (Z)	
Total Number of Late Notifications to Offsite Authorities for Actual or Simulated Operational Emergencies (A)	
Offsite Notifications PI = $[(Z-A)/Z] \times 100\%$	